REMARKS/ARGUMENTS

Claims 1-15 and 17-25 remain in this application. Claims 10 and 23 have been amended. Claims 1-9 and 18-22 have been withdrawn as a result of an earlier restriction requirement. In view of the examiner's earlier restriction requirement, applicant retains the right to present claims 1-9 and 18-22 in a divisional application. Claim 26 is new. Claim 16 has been cancelled by this amendment.

Claims 10-12, 15, 16, 23, 24 and 25 are rejected under 35 USC 102(e) as being anticipated by US Patent Publication 2003/0180602 (Finn).

The Examiner, in describing this reference, stated: "The protrusions have a height of 5% of the average thickness, which can equate to a surface roughness of 2.5 microns ([0175]).

It is noted that a 2.5 μm surface roughness, if it is 5% of average thickness, would translate to the average thickness of 50 μm, which is outside of Applicants' claimed maximum electrolyte thickness of 30 μm.

Furthermore, claims 10 and 23 have been amended to specify that the electrolyte sheet is "bendable to an effective radius of curvature of less than 20 cm". The cited reference is completely silent on the degree of flexibility (if any) exhibited by the electrolyte sheet. Flexibility (electrolyte sheet being bendable to an effective radius of less than 20 cm) is not an inherent characteristic of the electrolyte sheet, and none of the cited references imply that it is. It is not inherent that Finn electrolyte is than bendable to the effective radius of less than 20 cm because this property of the electrolyte sheet depends on: (i) overall or regional flatness, (ii) electrolyte sheet microstructure, and (iii) size and frequency of inclusions or defects. For example, electrolyte sheet having inclusions of larger than certain size will break when bending, and will not be flexible. If the electrolyte sheet is made by a different process than the one by the applicant, it may not be strong enough, or flat enough to provide the required degree of flexibility. Furthermore, the cited reference discloses the electrolyte sheet with a huge range of thickness- from 20 μm up to 10,000 μm thick. There is no mention of

electrolyte flexibility, and an electrolyte sheet that is 10,000 μm thick is not likely to be bendable to an effective radius of less than 20 cm. Accordingly, it is not inherent that the Finn electrolyte sheets are bendable to an effective radius of less than 20 cm.

Claim 10 also states that "at least 50% of the area of the electrolyte sheet situated under said at least one cathode and said at least anode has a thinner body than the rest of the electrolyte sheet situated under said at least one cathode and said at least anode". Claim 23 is similar to claim 10, but specifies that "at least 75% of the area of the electrolyte sheet situated under said at least one cathode and said at least anode has a thinner body than the rest of the electrolyte sheet situated under said at least one cathode and said at least anode". The cited reference does not disclose this feature.

Claims 10-16, and 23-25 are rejected under 35 USC 103(a) as being unpatentable over US Patent Publication 2001/0044043 (Badding) in view of US Patent Publication 2003/0180602 (Finn).

Applicants' claim 10 calls for "thin electrolyte sheet of varied thickness of an average electrolyte sheet thickness between 3 micrometers and 30 micrometers" and "wherein said electrolyte sheet ... has a surface with a pre-determined re-producible pattern and a thickness variation of at least 2 micrometers and its thickness variation is 6.6% to 90% of the average electrolyte sheet thickness.

The Badding reference (2001/0044043) is the primary reference. The Badding reference teaches (see Fig. 2) an electrolyte sheet (4) with additional interface layers (2) situated thereon. The electrolyte sheet (4) of Badding does not have surface variations, and has a uniform thickness. The interface layers are separate layers, "applied by tape casting" (see paragraph [0044] of Badding). These additional interface layers (2) improve adhesion of electrodes and reduce resistance (see paragraph [0044] of Badding).

The Examiner pointed out that Finn discloses electrolyte surface texturing. The Examiner than stated that "The motivation to use texturing parameters of Finn is to improve adhesion and reduce the electrolyte/electrode resistance". However, since the Badding device already achieves these functions by having the interface layers (2), this motivation to combine the references does not exist.

Claims 13 and 14 are rejected under 35 USC 103(a) as being unpatentable over US Patent Publication 2003/0180602 (Finn).

Claim 13 states that the electrolyte sheet has a thickness between 4 and 15 micrometers. Claim 14 states that the electrolyte sheet thickness is between 8 and 15 micrometers.

The Finn reference does not disclose this feature. In fact, the Fin reference discloses a minimum thickness of 20 micrometers.

It is not obvious that making the electrolytes sheets within the claimed thickness range and with the specific claimed thickness variations will not jeopardize electrolyte's integrity and strength. It is Applicants who realized that by making the electrolytes sheets within the claimed thickness range and with the specific claimed thickness variations, the electrolyte sheet will maintain its structural integrity, while the ohmic resistance will be improved beyond 0.5 ohms/cm^2. As mentioned above,flexibility and strength of the electrolyte sheet is not an inherent characteristic of the electrolyte sheet, because these properties of the electrolyte sheet depend on: (i) overall or regional flatness of the electrolyte sheet, (ii) electrolyte sheet microstructure, and (iii) size and frequency of inclusions or defects.

New Claim

Claim 26 is new. It depends from claim 10 as its base claim and specifies that "thinner areas of said electrolyte sheet are textured." This statement is supported, for example, by Figs 4A and 4B of Applicants specification.

Conclusion

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that no extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to Svetlana Z. Short at 0412.

Respectfully submitted,

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